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THE case is stated in the opinion.

Mr. George A. King and Mr. George H. Lamar for appellant.

Mr. Assistant Attorney General Thompson for the United States.

MR. JUSTICE CLARKE delivered the opinion of the court.

This is an appeal to review a judgment by the Court of Claims in favor of the Government, on a claim for damages growing out of a written contract dated May 18, 1898, for the manufacture of 50 wire-wound rapid fire guns, 25 of 5-inch caliber and 25 of 6-inch caliber. No guns having been delivered under the contract it was annulled by the Chief of Ordnance, with the approval of the Secretary of War, in an order, notice of which was given to the claimants on January 17, 1901. The appellant is the administrator of the survivor of one of two claimants to whom we shall refer in this opinion as "the claimants."

The essential parts of the contract to be considered are as follows:

"The muzzle velocity shall not be less than 2,600 f. s., with a good smokeless powder that shall not give a pressure of over 40,000 pounds per square inch, using a projectile of 55 pounds weight for the 5-inch gun and 100 pounds weight for the 6-inch gun. . . . The system of rapid-fire breech mechanism employed will be either the Brown or Dashiell, and must meet with the approval of the Ordnance Department. . . . It must permit of being easily and conveniently operated, and permit the same man to traverse, elevate, sight and fire, without moving the eye from the sight. . . . The first gun manufactured will be fired with full service charges of powder, such as that used in testing other rapid-fire guns

of similar caliber, and with not more than the regular service pressures for endurance, and the gun must be fired for endurance 300 rounds or less as rapidly as practicable at the proving grounds of the manufacturers, commencing as soon as the gun is completed and continue firing as the Department may require, 5 rounds to be fired with pressures of about 45,000 pounds, and shall not exceed 50,000 pounds, these to be included in but at close of the test, and the acceptance of the remainder of the same caliber will depend upon the type gun passing its test satisfactorily. . . .

"Both gun and carriage must endure these tests in all respects satisfactorily, both as to the strength of material and facility of operation. . . .

"It is stipulated and agreed that the party of the first part shall deliver for test the first complete gun with mount, etc., within three months from the date of execution of this contract. . . .

"If any doubts or disputes arise as to the meaning of anything in this or any of the papers hereunto attached and forming this contract, the matter shall be at once referred to the Chief of Ordnance, U. S. Army, for determination. If, however, the party of the first part shall feel aggrieved at any decision of the Chief of Ordnance, it shall have the right to submit the same to the Secretary of War, and his decision shall be final."

"5th. If any default shall be made by the parties of the first part in delivering all or any of the guns, etc., mentioned in this contract, of the quality and at the times and places herein specified, then, in that case, the said party of the second part may supply the deficiency by purchase in open market or otherwise (the articles so procured to be of the kind herein specified as near as practicable), and the said parties of the first part shall be charged with the expense resulting from such failure. Nothing contained in this stipulation shall be construed to prevent the Chief

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of Ordnance, at his option, upon the happening of any such default, from declaring this contract to be thereafter null and void, without affecting the right of the United States to recover for defaults which may have occurred."

It is apparent from these excerpts that the contract contemplates the making and testing of a "type gun" of each caliber; that the acceptance of additional guns was dependent on this one "passing its test satisfactorily," and that the Chief of Ordnance and his superior officer, the Secretary of War, were to decide, not arbitrarily, but candidly and reasonably, whether the gun had satisfied the required test. *Ripley v. United States*, 223 U. S. 695, 701-2.

The 5-inch test gun was to have been completed within three months from the date of the contract, but there were delays, assented to by the Government, such that it was not completed for ten months, so that the first test began on March 8th of the following year (1899).

The finding by the Court of Claims as to what occurred during this firing test, to which the type gun of 5-inch caliber was subjected, is as follows:

"The test firing began with a pressure of 18,000 pounds per square inch, which was raised on the second round to 21,050 pounds, and on the third round to 32,800 pounds, with a muzzle velocity of 2,705 feet per second, and on the fourth round to 35,750 pounds pressure, with a muzzle velocity of 2,821 feet per second, *on which round the carriage was injured*, it not being strong enough to stand such high muzzle velocities.

"The claimants then protested against the increases made in the powder charge and insisted that any charge that was sufficient to produce a muzzle velocity of 2,600 feet per second was all that was required by the contract, except for the five high-pressure rounds required at the close of the test. This question was submitted to the Chief of Ordnance before firing was continued and by him

decided in favor of the claimants. Thereafter the powder charge was so adapted as to give this muzzle velocity of 2,600 feet per second as a general rule, except in the said five high-pressure rounds at the close of the test, which were fired with pressures of between 45,000 and 50,000 pounds per square inch. *On one of these high-pressure rounds, the 293rd round, the breech bushing and jacket of the gun were cracked and the breech could not be opened by hand.*

"These breaks were repaired, but the mechanism repaired did not operate satisfactorily thereafter.

"During the course of the test the gun was star-gauged by the Government inspector about every 50 rounds, and these gaugings, at different times throughout the test and at different points in the bore, indicated varying and shifting changes, both increases and decreases, in the diameters of different cross-sections of the bore, the gauging at several times and places indicating a reduction of the normal diameter of 5 inches down to 4.99 inches; and as a precaution against the danger of rupture or explosion of the gun by a reduction of the bore sufficient to cause the projectile to stick in the bore when the gun was fired an iron plug of the diameter of the projectile was passed through the bore about every 10 or 12 rounds, on one of which occasions, about the 100th round, it stuck in the bore so tight at one point as to require the efforts of three men to force it through with a pole.

"At all times, with this exception, the plug passed through freely.

"These reductions and variations in the diameter of the bore of the gun were to some extent due to deposits of metal on the walls of the bore by abrasion from the projectile in its passage from the gun, but were principally due to changes in the cross section of the bore from a round to an elliptical form, resulting from a shifting of the segments enveloping the liner tube by the explosion of the charge, and also to an

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actual contraction of the bore by the compression of the liner tube forming the walls of the bore by the elastic tension of the wire with which the tube and its enveloping segments were wound and bound together, which tension, with the further increase therein resulting from the explosion of the charge upon reaction after the explosion, exercised a compressing effect upon the liner tube.

"In large guns of ordinary types of construction there is usually a slight contraction of bore during the first few rounds of firing, after which the gun settles down to a new condition, and thereafter the changes of bore diameter in a normal gun are almost entirely in the way of increase of diameter from erosion and abrasion.

"While the variations and reductions in the diameter of the bore of the type gun indicated by the star-gauging during the firing test did not quite reach a point of actual danger to the gun from rupture or explosion by sticking of the projectile in the bore in the process of firing they did reach the limit of safety in this respect, and created a reasonable apprehension of danger in the minds of the Chief of Ordnance and other officials of the War Department connected with the execution of the contract for the guns, and caused the Chief of Ordnance and the Secretary of War to refuse to pass and accept the type gun unless it should satisfactorily pass a further test of 100 additional rounds, as proposed and recommended by the Chief of Ordnance in his indorsement of November 3, 1899, hereinafter set forth. This apprehension was heightened by the fact of the new and comparatively untried type of construction of the gun, and by its reversal of the usual behavior of guns of the ordinary types of construction in the way of its continued contractions and changes of bore in the course of extended use."

These findings of fact, which, under the circumstances of this case, must be accepted as final (173 U. S. 464, 470; 239 U. S. 221), if considered independently of the report

of the Chief of Ordnance, yet to be discussed, obviously justify the conclusion that the test gun did not meet the contract requirements.

The carriage of this new and experimental type gun failed on the fourth round of firing, with a pressure well within the contract maximum; the gun itself developed such cracks in the breech bushing and jacket that the breech could not be opened by hand and did not work satisfactorily after repairs were made; and it showed unusual and abnormal changes in the bore which, while not resulting in an explosion, created, in the mind of the Chief of Ordnance, a reasonable apprehension of danger in the use of the gun, and in his judgment required that it be modified and that it be subjected to an additional firing test, before it could be accepted as having satisfactorily passed the test prescribed by the contract.

The report of the Chief of Ordnance to the Secretary of War on the result of this contract test is dated November 3, 1899, and is as follows:

"In the opinion of this office, while the type 5-inch gun is not deemed as satisfactory a gun as is desirable for service, *yet its test has apparently met the contract requirements*, and if certain modifications in the gun and its carriage shall be made in their further manufacture to remedy defects developed in the test, and in other respects be made to meet more fully the requirements of the department, *to which propositions the company willingly agrees*, it is recommended that the 5-inch type gun and its mount be accepted, *subject, however*, to the condition that, in view of the moderate pressure to which this gun has been subjected, the department fire it 100 additional rounds, or less, as it may deem expedient, with charges giving higher pressures and assimilating more nearly the pressures that would be experienced in actual service, and that in the further manufacture of the guns they shall be modified, at the expense of the company,

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so as to remedy any further defects that may be developed in these additional firings."

The claimants' contention is rested largely upon this clause in the above paragraph, viz: "Yet its test has apparently met the contract requirements." And their argument is that the test which the gun must meet was prescribed by the contract: that the facts found, and especially this clause, show that it proved equal to the required test; that the subsequent annulling of the contract by the Chief of Ordnance, with the approval of the Secretary of War "was not made and taken in good faith, but under a mistake so gross as to justify an inference of bad faith;" and that, therefore, the claimants are entitled to recover the damages prayed for.

If this expression, so much relied upon, stood as the unqualified conclusion of the Chief of Ordnance and had been approved by the Secretary of War, the interpretation claimed for it might be justified, but the contextual setting of the clause shows clearly that in the opinion of the Chief of Ordnance "defects (had) developed in the test," which could be remedied only if certain modifications were made in the manufacture of both the gun and carriage, and that his understanding when making the report was that the claimants concurred in this conclusion and willingly agreed to conform to it.

The clause of the report so emphasized is the expression of a soldier, not of a technical lawyer, and the paragraph of the report in which it is found, taken altogether, conveys to us the conviction that the Chief of Ordnance, while concluding that the gun was defective in design and construction, nevertheless believed that it contained elements of invention which, modified and improved, would make of it a weapon of value to his country and that he was eager to lend official assistance to its further development, which he believed the claimants were equally eager to receive and profit by. In the interpretation most favor-

able to the claimants the report is an acceptance conditioned upon developments and improvement of the gun which the Chief of Ordnance thought possible, but which conditions, as we shall see, the claimants, perhaps because of less confidence in their invention, never attempted to satisfy.

On January 31, 1900, this report of the Chief of Ordnance was approved by the Secretary of War, and a week later the decision and recommendation thus approved were communicated to the claimants.

But, instead of the coöperation which the Chief of Ordnance thought assured, the Government next heard from the claimants through lawyers and then through a letter from the claimants themselves, asking the Secretary of War to suspend further action until argument could be heard, and stating that "they had not as yet assented to any modification of the gun and carriage."

The Secretary of War replied to the lawyers that there was no question before him open to argument, but what, if any, reply was made to the letter of the claimants does not appear.

However, long prior to this, on May 16, 1899, after the test firing had been suspended and three months before it was completed, it was suggested by the Government to the claimants that they should furnish "the mathematical computations and engineering considerations upon which their claims of strength of construction and other qualities of their gun were based." No notice was taken of this suggestion for almost a year, and not until after claimants were officially notified of the approval by the Secretary of War of the report of the Chief of Ordnance of November 3, 1899. Thereafter, on February 17th, 1900, the claimants notified the Chief of Ordnance that they had employed two expert mathematicians to work out the various problems connected with the construction of their gun, and suggesting that they would like to

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have an army "officer of practical experience with artillery" assigned to cooperate with their selected experts and that they would compensate him for the service. Two days later the Government acceded to this and authorized a major in the army to join in making the computations as suggested by the claimants.

The finding of the Court of Claims does not show that anything further was done until, on January 17, 1901, almost three years after this three months' contract was to have been completed, when, after the claimants had permitted almost a year to pass without accepting the suggestion of the Government that modifications should be made in the gun and carriage to cure the defects which the firing test had disclosed, the Chief of Ordnance, with the approval of the Secretary of War, notified the claimants that, for failure to deliver an acceptable gun, their contract had been declared null and void. Against this conclusion the claimants protested and appealed to the Secretary of War for a revocation of the annulment order, but after hearing the claimants and their lawyers several times, the Secretary of War refused to revoke this order.

A month after the revocation order, the experts, employed almost a year before by the claimants, rendered to their employers a report on the technical problems connected with the construction of the gun, which the Government had called for almost two years before. This report the Court of Claims finds was "upon the whole, favorable to the style of construction of the gun; but defects of construction were pointed out and remedies therefor suggested in the way of modifications in the construction."

This discussion of the findings of fact by the Court of Claims leads us unhesitatingly to the conclusion that the claim that the Secretary of War and the Chief of Ordnance acted in bad faith or under a gross mistake is wholly

unfounded and gratuitous; that, on the contrary, they dealt candidly, generously, even helpfully, with the claimants and that the annulment of the contract under the circumstances was abundantly justified. The cause of the misfortune, which the claimants undoubtedly suffered, is not to be found in their treatment by the officials of the War Department but in their own refusal, from whatever cause, to accept the encouraging suggestion of the Chief of Ordnance that the Department was willing, by generous dealing and coöperation, to assist them in carrying forward their experimental gun to a successful development.

The claims made in argument that by various delays on its part the Government, in some indefinite way, waived its right to annul the contract, and that this right to annul was suspended until report should be made on the technical problems involved, by the experts selected by the claimants, it is true with the coöperation of the Government, but almost a year before, cannot be seriously considered. In the matter of delays the claimants were as much at fault and more, than the Government, and the delay of the technical report for almost a year was reasonable ground for assuming that no report was likely to be made, or that if made it would not be favorable to the acceptance of the gun, which last, as we have seen, is shown by the finding of facts by the Court of Claims, to have proved to be the case.

The judgment of the Court of Claims must be

Affirmed.